Therefore, we claim:

1. A sealant formulation prepared from components comprising:

(a) at least one ungelled mercapto-terminated polymer prepared by reacting reactants comprising at least one polyvinyl ether monomer and at least one polythiol material;

(b) at least one curing agent reactive with a mercapto group of the mercapto-terminated polymer; and

(c) at least one additive selected from the group consisting of fillers, adhesion promoters, plasticizers and catalysts.

2. The sealant formulation of claim 1, wherein said mercapto-terminated polymer has a glass transition temperature of less than -50°C.

3. The sealant formulation of claim 1, wherein said mercapto-terminated polymer has a viscosity of less than about 500 poise at a temperature of about 25°C and a pressure of about 760 mm Hg.

4. The sealant formulation of claim 1, wherein said mercapto-terminated polymer has a number average molecular weight of between 500 and 20,000.

5. The sealant formulation of claim 4, wherein said mercapto-terminated polymer has a number average molecular weight of between 2000 and 5000.

6. The sealant formulation of claim 1, wherein said mercapto-terminated polymer comprises 30 to 90 weight percent of the sealant formulation based upon total weight of the components used to prepare the sealant formulation.

7. The sealant formulation of claim 1, wherein said polyvinyl ether monomer is a divinyl ether monomer.

8. The sealant formulation of claim 7, wherein said divinyl ether monomer is selected from the group consisting of: divinyl ether, ethylene glycol divinyl ether, butanediol divinyl ether, hexanediol divinyl ether, diethylene glycol divinyl ether, triethylene glycol divinyl ether, trimethylolpropane trivinyl ether, tetraethylene glycol divinyl ether, cyclohexanedimethanol divinyl ether, polytetrahydrofuryl divinyl ether and mixtures thereof.

9. The sealant formulation of claim 1, wherein said polyvinyl ether monomer is a mixture of components comprising divinyl ether and polyvinyl ether having at least three vinyl groups.

10. The sealant formulation of claim 1, wherein said polyvinyl ether monomer comprises 20 to 60 mole percent of the reactants used to prepare the mercapto-terminated polymer.

11. The sealant formulation of claim 1, wherein said polyvinyl ether monomer has a pendant group selected from the group consisting of alkyl groups, hydroxyl groups, alkoxy groups and mixtures thereof.

12. The sealant formulation of claim 1, wherein said polythiol material is a dithiol.

13. The sealant formulation of claim 12, wherein said dithiol material is selected from the group consisting of 1,2-ethanedithiol, 1,2-propanedithiol, 1,3-propanedithiol, 1,3-butanedithiol, 1,4-butanedithiol, 2,3-butanedithiol, 1,3-pentanedithiol, 1,5-pentanedithiol, 1,6-hexanedithiol, 1,3-dimercapto-3-methylbutane, dipentenedimercaptan, ethylcyclohexyldithiol,

dimercaptodiethylsulfide, methyl-substituted dimercaptodiethylsulfide, dimethyl-substituted dimercaptodiethylsulfide, dimercaptodioxaoctane, 1,5-dimercapto-3-oxapentane and mixtures thereof.

14. The sealant formulation of claim 1, wherein said polythiol material has a pendant group selected from the group consisting of alkyl groups, hydroxyl groups, and alkoxy groups.

15. The sealant formulation of claim 1, wherein said polythiol material has a number average molecular weight ranging from 200 to 5000.

16. The sealant formulation of claim 1, wherein said polythiol material comprises from 40 to 80 mole percent of the reactants used to prepare the mercapto-terminated polymer.

17. The sealant formulation of claim 1, wherein said reactants from which said mercapto-terminated polymer are prepared further comprise a catalyst.

18. The sealant formulation of claim 1, wherein said curing agent is selected from a group consisting of polyolefins, polyacrylates, metal oxides, polyepoxides and mixtures thereof.

19. A sealant formulation prepared from components comprising:

(a) at least one ungelled mercapto-terminated polymer prepared from reactants comprising diethylene glycol divinyl ether and dimercapto dioxaoctane;

(b) at least one curing agent reactive with a mercapto group of the mercapto-terminated polymer; and

(c) at least one additive selected from the group consisting of fillers, adhesion promoters, plasticizers and catalysts.

20. An aerospace sealant formulation prepared from components comprising:

(a) at least one ungelled mercapto-terminated polymer prepared by reacting reactants comprising at least one polyvinyl ether monomer and at least one polythiol material;

(b) at least one curing agent reactive with a mercapto group of the mercapto-terminated polymer; and

(c) at least one additive selected from the group consisting of fillers, adhesion promoters, plasticizers and catalysts.

21. An electrical potting formulation prepared from components comprising:

(a) at least one ungelled mercapto-terminated polymer prepared by reacting reactants comprising at least one polyvinyl ether monomer and at least one polythiol material;

(b) at least one curing agent reactive with a mercapto group of the mercapto-terminated polymer; and

(c) at least one additive selected from the group consisting of fillers, adhesion promoters, plasticizers and catalysts.